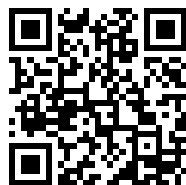

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**HISTORY OF MEDICINE
AND NATURAL SCIENCES**

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A N

Introductory Lecture

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EDWARD WARREN, M. D.

PROFESSOR OF THERAPEUTICS AND MATERIA MEDICA;

ON

Monday, October 15th, 1860.

BALTIMORE, MD.

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1860.

MP

BALTIMORE, OCTOBER 17th, 1860.

PROF. EDWARD WARREN, *Dear Sir :*

The class being very much pleased with your Introductory Address, delivered Monday, October 15th, have appointed the undersigned a Committee to wait upon you, and to request a copy of the same for publication.

Respectfully submitted,

R. EMORY,
W. B. STOKES,

J. BEATTY,

J. LATIMER,

C. SPATH,

Committee.

Y. A. B. L. J. C. S.

BALTIMORE, OCTOBER 18th, 1860.

DEAR SIRS :

With many thanks to the members of the class for their kind appreciation of my labors in their behalf, it will give me pleasure to comply with their request in regard to the publication of my Introductory Address.

Very respectfully yours, &c.,

EDWARD WARREN.

To Messrs. EMORY,
STOKES,
BEATTY,
LATIMER,
SPATH,

Committee.

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1860

INTRODUCTORY LECTURE.

GENTLEMEN :

SINCE the last meeting of this Class, the University of Maryland has been clad in mourning. Three of her sons have been called from their labors, and their Alma Mater has watered the new made graves with her bitterest tears of sorrow. Dr. Roby, who for fifteen years occupied and ornamented the chair of anatomy, has closed his earthly career, leaving to his children the legacy of an honorable name, and a reputation for erudition and ability second to that of no man in the country. Let him sleep in peace,—with “well done thou good and faithful servant,” as his rightful epitaph.

Dr. Berwick Smith, that legitimate inheritor and noble exemplar of professional skill, fills a premature grave. Thus one more manly heart has ceased to beat: a bosom filled with the noblest impulses, and the most chivalrous sentiments has been stilled forever: an eye sparkling with the electric light of genius has been closed by the chilling hand of death: a career that promised usefulness and honor,—that pointed to a grand and glorious future—that led ever upwards and onwards, like the sun in the Heavens, has been brought to a sudden and a most painful termination; and hearts have been lacerated by this sad catastrophe beyond the alleviation of friendship, and even the recuperative power of time. But whilst this Institution mourns the untimely fall of this noble scion—whilst it grieves at the loss of the “sapling bough,” under whose protecting shadow it had hoped to repose in years to come, it thanks Heaven that the Magestic Oak is yet vouchsafed it, and rejoices that a still greener and more honorable old age is reserved for this stately Monarch of the Forest.

Professor Charles Frick, too, my honored and lamented predecessor, has paid the penalty of his mortality; and instead of greeting you to-day from this stand in that

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eloquent and attractive manner as was his wont, he speaks to you from the silent portals of the tomb, and only in that mute but impressive lesson which is taught by a life of usefulness and a death of martyrdom. He fell early in the fight, and yet it was with his face to the foe and with his armor on. He was summoned ere his task was done, but not until he had shown himself a master-workman by every token that inspires confidence and awakens admiration. And the record of his life, though abruptly closed, conclusively shows not only that this Institution has sustained an irreparable loss, but that a light has been stricken from the firmament of science which was destined to illuminate it from centre to circumference.

May the noble teachings of this good man's example sink deep into every heart that palpitates before me to-night,—filling it with the same zeal and energy as glowed in his most loyal bosom, and winning for each one of you, when the "last of earth has come," a name not less honored and revered than that which he has left behind as his richest legacy and his proudest monument.

But though affection bids us linger at the tomb of departed worth, and gather up the scattered memorials of the past, duty calls us from this scene of sorrow, and points imperatively to the real business of the fleeting present.

I stand before you as an humble substitute for the distinguished gentleman whose death we mourn,—unaccustomed to such a position as this,—unfamiliar with the duties of a public lecturer, and fully sensible of the difficulties attendant upon the occupation of a chair which has been adorned by the genius of a Frick,—and yet with a heart that does not quail at the responsibilities assumed, since its every fibre glows with an enthusiasm for our noble calling, which is the more intense because of the seclusion in which it was engendered,—which intuitively appreciates the kindly sympathies surrounding me on this interesting occasion,—and which counts no aspiration too elevated,—no sacrifice too great, no labor too onerous in the sacred cause of that profession whereunto my destiny and yours are inseparably wedded.

In thus entering upon the duties of a public lecturer, I deem it not inappropriate to attempt some defense of medicine,—not that such a task has been made a matter of necessity by its adversaries,—but rather as a labor of love on my part, and with the hope of inspiring those who but stand upon its boundaries, with a proper appreciation of the beauty and grandeur of the vast domain they would explore.

Scepticism is a prominent characteristic of the times. So many new and startling facts have been discovered that men are in constant anticipation of a still more wonderful revelation. From the birth of the *Novum Organum* to the present moment, society has been in such a condition of confusion and excitement that nothing has seemed permanently settled. Systems hoary with antiquity, and before which the loftiest intellects had bowed submissively, have been overturned and destroyed. Theories hallowed by the proudest associations of the past, pregnant with promised blessings, and chronicled as the grandest achievements of the human intellect, have culminated, declined, and sunk to oblivion. Dreams have been converted into realities, which in their turn have become baseless chimeras and empty fallacies. Eureka! has been shouted so frequently and emphatically that mankind shrinks from the indulgence of credulity and lapses towards a hopeless infidelity. Ancient landmarks have been obliterated; the philosophy of ages annihilated; the faith of humanity shaken; and a revolution has convulsed the moral and intellectual world to their lowest foundations. New ideas have been promulgated; a broader horizon disclosed; a higher and more expanded realm presented; and an impetus given to human thought which has borne it from one triumph to another until victory has developed a confidence in its own resources and powers which reduces everything to the compass of effort, and the bounds of aspiration. Reason has thus been elevated to the throne of universal dominion, created a despot by the voluntary franchise of the world, and worshipped as a god wherever the human family has a habitation. Ethics, Philosophy, and Physics have all been bound to its triumphal car, and their complete humiliation demanded

as a contribution to the glory of this imperial dictator. And man stands to-day trembling upon the brink of a most profound scepticism, listening with intense solicitude lest every passing breeze may bear the tidings of a fresh invasion by this mighty conqueror, or a summons for the surrender of the last asylum where faith has found a refuge and a home.

This is the vaunted civilization of the nineteenth century. This is the glorious millennium of the poet's song and the statesman's eulogy. This is the bright realization of the splendid dreams which have dazzled the world since creation's morn. And it is in connexion with this extraordinary concatenation of phenomena that I desire to consider the claims of medicine to the confidence and respect of men.

That *Reason* is the most splendid, ennobling, and god-like attribute of humanity, no man can deny; but that it deserves the commanding position claimed for it in these latter days, must be controverted upon the very threshold of the present inquiry.

As a means of determining the precise nature of its claim to the honors with which it has been invested, it must be considered under several different heads.

(1.) The experience of men proclaims that *Reason* is *fallible*. Since man's creation he has been an intellectual being. He has observed, compared, and judged. He has generalized, eliminated, and deduced. In a word, he has manifested and exercised that peculiar faculty which is denominated *Reason*.

Sustaining the most intimate and complicated relations both with the objective and subjective world, he has endeavored to account for the phenomena around him, and to explain the laws which govern them. Thus have originated principles, theories, and systems with which mankind has been satisfied because convinced of their truth and applicability. That is to say, Reason has been satisfied with the proof presented, and has accepted them as necessarily correct. But, in the process of time, new facts have been unfolded, more light has illuminated the intellectual world, the wisdom of the past has become the foolishness of the present, and

men having grown ashamed of their fatuity and blindness, have sought eagerly for other, and more accurate explanations of the mysteries of nature. Influenced continually by the *character of the proof* presented, Reason has been repeatedly convinced of the truth of propositions completely paradoxical and absurd. Thus, as generation has succeeded generation in the world's "eventful history," old theories have been replaced by new ones in an endless and unbroken succession, whilst from every wave of time, as it rolls to eternity, there comes a voice which proclaims in thunder tones, the utter *fallibility* of human Reason.

(2.) Reason is necessarily *weak*, as can be easily shown. Nature is filled with mysteries which human ingenuity cannot unravel. The starry Heavens, the azure deep, the revolving earth, and the whole objective world have their secrets, which Divinity alone can comprehend. And even when the intellect has soared to the skies, and, guided by the light of genius, has discovered the great law which governs the universe—that wondrous principle of gravity by which the charioteer of the skies holds his fiery coursers in their spheres,—it realizes in the moment of triumph and exultation, the insignificance of its noblest powers, and feels with Newton, that "human knowledge is only a grain of sand" compared with the great ocean of truth which rolls beyond.

Revelation lays open a domain as much removed from the reach of Reason, as the throne of the Creator is above His footstool. The great facts of man's mysterious destiny, the momentous truths from which he is separated only by a breath or a moment, are completely beyond the grasp of this mighty faculty. The problems in which his eternal interests are involved, cannot receive a proper solution without the intervention of light from Heaven.

But even in an humble arena this godlike attribute is constrained to submit to a defeat which should humble its pride and demonstrate its weakness. There are multitudes of facts connected with the daily experience of every man before which Reason lowers its crest, and acknowledges a defeat. The axioms, the self-evident propositions, the ultimate principles, the intuitive truths which constitute the basis of all

judgment, reflection, and ratiocination, are as much removed from the province of Reason as the loftiest truth, or the most profound theorem.

It is thus clear that Reason is *weak* inherently,—in its essence,—in its elements,—in its totality ; and hence that philosophy which makes it the representative of strength, the type of majesty, the shibboleth of power is utterly false and unreliable.

(3.) The *uncertainty* of Reason would seem to follow necessarily from these statements, but we desire to make it more apparent, and to rest it upon other principles.

In the *first place*, Reason must fail where our ideas fail, and as man's intellectual operations are necessarily circumscribed, there must be a limit, and a very narrow one for the exercise of this faculty. *Secondly*, ideas are frequently obscure and imperfect ; and hence the conclusions based upon them are equally so. *Thirdly*, the faculty of Reason is not a fixed principle, but varies so materially in its manifestations as to be decidedly unreliable, as is established by the antagonism of opinion prevailing among men of equal intelligence,—each one of whom is prepared to defend "the faith which is in him" upon logical grounds and to his own entire satisfaction. And *lastly* and *chiefly*, as it is the province of Reason to compare before judging, there must be some clear, precise, and definite *intermediate idea* by which an agreement between the objects compared, can be established ; and it must follow that another source of uncertainty, and a most important and prolific one also, is established in this connexion.

From these observations it becomes apparent that Reason is unreliable, *and that without the support of some positive sanction, as of revelation or experience*, it has no claim upon the confidence of men. It is thus evident that this faculty has been too much exalted in these latter times. Human vanity has bestowed honors and rewards upon it, far beyond the demands of justice and propriety. The idolatry of blind and infatuated worshippers has deified it. The clouds of incense lingering around its altars, have armed it

with terrors. The enthusiasm and devotion of zealous votaries have swelled the number of its victories, and proclaimed it a conqueror. And the time has at length arrived when it should be banished from the throne of its usurpation, stript of its false paraphernalia, and confined within the boundaries of its appropriate province.

Reason has been defined by Jouffroy, "the faculty of *comprehension*." It is an emanation from that omniscience which distinguishes the Godhead, the link wherewith humanity is bound to divinity, the culmination of that intellectuality with which the *infinite* has endowed the *finite*. Its office is to compare, to judge, and to conclude. In it are comprehended the establishment of premises, and the formation of conclusions,—the processes of induction and of deduction.

But, partaking of the nature of man, it is necessarily fallible. Designed for a subordinate destiny and a definite purpose, its powers are proportionably limited. Called into existence by a superior intelligence for the perfection of particular designs, it was born a slave, and cannot wear a crown. And hence, though the only light which nature has supplied for the guidance of man, it is not invariably trustworthy, but frequently proves an *ignis fatuus*, leading its followers into the most perplexing errors, and involving them continually in still deeper mists of ignorance and doubt. In view of all these facts, it becomes us to pause and to deliberate before surrendering to that unmanly spirit which advises only submission to the demands of this despotic usurper. It is a duty to stand bravely up for our rights, and to refuse the abandonment of the most honored and cherished opinions at the first summons of this arrogant and merciless invader.

By ratiocination is meant the exercise of reason, which comprehends something more than the syllogistic method of disputation so long characteristic of the schoolmen, or that mathematical process of deduction whereby such important results have been attained in physical science. As Locke has long since demonstrated, reason has as much to do with generalization, and the process of induction, as with the formation of conclusions. But this is a "fast age," the

spirit of the present era is opposed to everything which demands time and labor for its perfection. Haste is a distinguishing feature of the day. The value of everything is measured by the celerity of its attainment. Society is only a rush and a scramble. The minds of men have become so habituated to the annihilation of space by steam and electricity, that they die of ennui unless time can be destroyed with the same rapidity. And hence we see, in all departments of learning, hasty and incongruous generalizations, incomplete and unsatisfactory inductions, in connexion with some of the most brilliant triumphs of pure deductive logic that the world has known. Medicine has felt the influence of this pernicious system, and has suffered from it to some extent. The batteries of a thousand enemies have been turned upon it simultaneously. Argument after argument has been hurled alike against its strongest and its weakest points. False friends, and open foes have conspired together for its destruction. Reason has sounded the tocsin of opposition, and with her victorious flag streaming from a thousand rallying points, has marshalled her well-trained legions against its honored principles, resolved to accomplish their destruction, if within the compass of human effort; and I now propose to enter this well-fought field for the purpose of ascertaining the precise condition of the opposing parties.

You have seen that Reason is most unreliable when the ideas to be compared and the idea by which this comparison is effected are insufficient, that is to say when the generalization is incomplete and the deduction inadequate. When, then, an *entirely different condition of things* exists, Reason must not only be more deserving of confidence, but its conclusions are nearest the truth—which is the final cause of all mental endowment. By the term Science is meant the exact realization of this “different condition,” in regard to several distinct propositions, sustaining, both in their essential nature and the laws controlling them, certain necessary relations to each other, and combined into one harmonious and logical whole.

Now, it is evident that, however seemingly complete the fundamental ideas or principles upon which the original

judgment is formed,—however intimately and dexterously the integral facts are bound together,—or with whatever plausibility of argumentation they may be defended,—the reliability of the whole must depend upon some practical demonstration of its truth. The fallibility, weakness and uncertainty of Reason, demonstrate the importance of establishing some absolute test, by which to determine its claims to our confidence; and it is only by applying the *experimentum crucis* of actual experience that the question can be properly settled. A particular system deserves, then, to rank as a science only when the *subjective theory* upon which it is reared has been tested by *objective facts*, and found correct. The champions of medicine claim that the “condition,” above explained, is fully complied with. They demand for their system the dignity of a science, and they fearlessly appeal to the history of the world in support of their assertions. The question becomes, then, one of fact and not of argument, a matter for evidence and not for logic, a practical investigation and not a judicial one. If medicine, viewed as a whole, has been a success and not a failure, if it has accomplished its legitimate purposes, if it has advanced towards perfection, if its career has been one of real progression, then it is fair to conclude that the process of reasoning upon which its claims depend, is reliable, and worthy of confidence.

If medicine be a perfect science, complete in all its parts, exact in every principle, accurate in ultimate details, and embodying only the plainest, and most palpable truths, the art deducible therefrom must be so infallible as to preclude the possibility of failure, and consequently to render all progress a matter of impossibility. But, as perfection is not an attribute of humanity, and as the application of so rigid a test as that which excludes all advancement, and demands the maximum of development in the premises, would eventuate in the complete destruction of all the sciences, and in the annihilation of the very term itself, it is manifest that the claims of each particular system are to be tried by another and less stringent standard than this.

From this statement two important facts are deducible. The *first* is, that though the rationale of disease be not

thoroughly understood, the department of therapeutics incomplete, and the results of medication in a measure uncertain, the system may still be founded upon such irrefragable principles as to entitle it to the rank and dignity of a veritable science. The *second* is, that, as no test which excludes progression can be true, it must follow that the proper standard by which to test the claims of medicine, is one wherein *advancement* enters as a necessary and characteristic element. But *advancement* implies both the imperfection of the system and the ignorance of its agent; and hence, in establishing this as a test of scientific truth, the existence and manifestation of these things, *i. e.* imperfection and ignorance, so far from being incompatible with it, are only necessary concomitants,—legitimate expositors of the resulting development,—infallible representations of the progression actually made,—and analogical types of the exact *status* of the science.

And yet, it is in this connexion that medicine has been most vigorously assailed. Its claim to the position of a science has been principally attacked in this connexion. This has been the vantage-ground upon which the enemies of our exalted calling have chiefly rallied when preparing for their most desperate charge. But, in thus logically establishing the foregoing proposition, we have effectually driven our adversaries from their strongest position, by demonstrating its weakness, and showing that medicine is still impregnable. Let, then, the imperfections of our system be duly chronicled as they continually become more apparent! Let our noble art be perpetually reproached with its uncertainties as the radiance of a higher knowledge discloses its defects! Let the ignorance of physicians be heralded to the world, without stint or limitation, as the advances of each revolving year eliminate the errors of the past, and accumulate still grander truths for the future! Wherever a shadow falls there must be sunshine to produce it. There can be no evil without a standard of good by which to test it,—no uncertainty without a corresponding certainty to give it character and meaning,—no ignorance without some correlative knowledge wherewith to compare it; and so the imperfections of

medicine, manifesting themselves through the instrumentality of its advancement, only indicate, by contrariety of association, the inherent beauty and perfection of our system; whilst the mistakes of its votaries serve but to render their gradual but triumphant approximation towards infallibility the more glorious in itself and conspicuous to the world.

All objections then, based upon the ground of "imperfection and ignorance," are thus shown to be idle and valueless, since such knowledge is obtained chiefly by the means of that *progression* which is an index and a representative of the ultimate truths upon which the whole science is reared.

By the term *progression* as thus employed, is meant a gradual approximation towards ultimate perfectibility—a veritable development resulting from the attraction and addition of substantial facts—a genuine growth produced by the appropriation and assimilation of the elements of truth. This process may be relative, but it must be absolute. It may be comparatively slow, but it must be intrinsically certain. And, though it may not keep pace with man's necessities, or march to the music of his aspirations, its motto is *Excelsior*, and its career is ever *Onward*.

The science of medicine embraces all the facts and principles which connect themselves with the human system, both in a normal and abnormal state, *i. e.*, in health and disease. The medical philosopher has, then, presented for his examination and study, first, the organism; secondly, the organism in its physiological relations; thirdly, the organism in its pathological relations; and fourthly, the agents or instruments by which Pathology is transformed into Physiology. It is thus that the departments of Anatomy, Physiology, Pathology and Therapeutics are distinguished and defined.

Therapeutics—the branch which particularly belongs to my chair—deserves the special consideration of the student of medicine, since it considers all those agencies by which a pathological state is transformed into a physiological one when it has been induced, or is prevented in the premises. Health is Heaven's best gift to man; and the desire for it is as natural and as necessary as the pulsations of his heart.

Hence it is that the search for the means of restoring and preserving it has been prosecuted with avidity in all countries and ages of the world. And it is thus that the domain of Therapeutics has been enlarged and improved, until it has attained a magnitude and beauty without a parallel in the history of medicine. As disease is the intermediate state between health, with all its pleasures, and death, with its accompanying terrors, and has a natural tendency to return to the one and to lapse into the other, the great business of man has been to discover those agents which would strengthen its affinities for the normal state, and thus prevent that catastrophe, which, though ultimately inevitable, is necessarily fearful. Fortunately for humanity, the Great Ruler of the universe has consecrated certain means to this most noble end ; and it is upon this momentous fact—this most sublime truth—this divine ordination—that the science of remedies is founded.

If these four great departments, with their reciprocal relations, their necessary ramifications, and their legitimate consequences, are distinct and symmetrical systems, when considered with reference to their unities, perfect in themselves, and seemingly incomplete only because of our inability to distinguish and arrange the facts pertaining to them, they do not become the less true when combined into a harmonious and beautiful system by some appropriate principle. The science of medicine is nothing more or less than the logical, natural and symmetrical grouping of the fundamental truths involved in these separate propositions into a homogeneous whole, of which the controlling and modifying principle,—the central and vitalizing nucleus,—is that idea which the doctrine of final causes eliminates, and which is illustrated in that desire for “protection and preservation” experienced by every member of the human family.

If, then, *progression* be the true test by which to determine the value and reliability of any given system, our task is already accomplished, for it would be an insult to the intelligence of my auditors to suppose them ignorant of the wonderful advances which have been made in every depart-

ment of medicine. You all know that Anatomy, as taught by Hippocrates, who only once saw a complete human skeleton, and whose opportunities for dissection were of the most limited and insufficient character, as he himself deplores, is no more to be compared with the Anatomy of to-day, than "the pent up Utica" to "the boundless continent" of the poet's swelling numbers. I need not tell you of the multitudinous facts and principles by which Physiology has been beautified and enlarged since Van Helmont dreamed of his Archœus, and Haller lost himself amid the recondite vagaries of the *Vis Insita*. It would be a work of supererogation to relate the history of Surgery from the times of Celsus, illustrated as it is by repeated triumphs, adorned with the proudest trophies, and crowned with the countless blessings it has secured to the human family. And I should but repeat a "familiar tale" did I dwell upon the magnificent contributions which a progressive Chemistry has made to the *Materia Medica*, and the rich offerings which Botany, from her wide and still extending domains, has placed upon the altars of fair Hygea, or attempt to contrast the department of Therapeutics, radiant as it is with beauty, and exulting in the consciousness of power, with that of the Father and Founder of Medicine, who went forth to combat disease in all its protean forms, armed only with a brave heart, a strong mind, and a few simples from the mineral and vegetable kingdoms, such as the merest tyro of the present day would smile upon with contempt.

The truth is, that though progression has been the watchword of the times, it has found no prouder or more splendid illustration than that afforded by the history of Physic, in all of its departments; and hence, if it be a veritable test of truth,—if it be the talisman by which theory is embalmed in fact,—if it be the proper criterion by which to determine the accuracy of the deductions of human reason, then does Medicine pre-eminently deserve the rank, the dignity, and the homage of a veritable science.

I might rest my case at this point, claiming that, as the test has been legitimately adopted and fairly applied, in

accordance with every principle of justice and law of logic, the claims of medicine to confidence and respect have been fully, fairly and conclusively vindicated. But, to make the demonstration more complete, I shall proceed to show, briefly, that Medicine has really accomplished its destiny,—that it has “protected” men against the invasion of disease, and “preserved” them from death when attacked.

Man finds within him a horde of morbid principles, developed slowly, but often surely, from original elements, and which experience proclaims the harbingers of inevitable decay, and the precursors of certain death. The hand, with which he is accustomed to wield the weapon of defence or the implement of industry, falls, at an unexpected moment, palsied and powerless. The sense, through which his delighted soul had looked out upon the beauties of nature, is suddenly obliterated. The form, whereon the signet of divinity has been stamped, wherein symmetry and beauty have found their most complete embodiment, and which is seemingly the very type and temple of health and vigor, wastes gradually away under the influence of a subtle poison. The intellect, which has communed with the infinite, drunk deep draughts from the fountain of knowledge, revelled in the glorious atmosphere of poesy, and soared throughout the boundless realms of space in search of truth, abandons its aspiring dreams, and lapses into fatuity or forgetfulness. And the heart, which bounded to the magic touch of love, swelled with the gushing tide of generous emotion, or thrilled tumultuously at the syren whispers of ambition, forgets the *role* of life, and beats no more forever. It is thus that every child of mortality finds himself the subject of disease and death, and recognizes the incalculable value of some means wherewith to arrest the one and to prevent the other. Medicine seeks to supply the means thus imperatively demanded by the necessities of the human family; and it is manifest that, though, *theoretically*, the system may seem correct, its claims to the dignity of a real, a truthful, a reliable *science*, must depend upon the answer which experience gives to the question: whether or not it has actually “prevented and cured disease?”

Now, though it was the boast of Dr. Redcliff that he could write the whole art of combatting disease upon "half a sheet of paper," it can be proved incontestably, not only that the human family has been protected against the invasion of disease, but that many fatal maladies are more successfully treated now than formerly.

(1.) Prevention of Disease. It is not my purpose to enter into a minute consideration of those sanitary and prophylactic measures, by which so many of the human family have been rescued from untimely graves, and such an immense amount of suffering prevented, but I must say that they cannot be esteemed an entire failure when it is remembered that, though in the city of New York, within the space of 20 years, 12,000 persons have died of hydrocephalus, 14,000 of cholera morbus, 21,000 of erysipelas, 20,000 of convulsions, there have been only 600 deaths from yellow fever in 50 years, notwithstanding that this terrible scourge has been knocking all the while at her very gates, and unfolding its sombre banners within sight of that grand metropolis.

In view of this and kindred facts, it strikes me forcibly that the questions to be settled, as I have always insisted, are simply these: Shall graves or purses be filled? Shall a nation such as ours, in the middle of the nineteenth century, —with the full blaze of science illuminating her—standing upon the vantage ground of a pure and ennobling religion, —and with all the startling lessons of experience appealing, in their silent eloquence to her,—shall she illustrate her venal scepticism, or criminal weakness, by sacrificing, upon the altar of mammon, one of the richest legacies from the wisdom of the past? What if commerce suffers? What if trade is paralyzed? What if the merchant prince languishes in his stately palace, and eats the hard-earned bread of toil once more? Is not the fountain of tears, in many a loving heart, kept with its seal unbroken and its waters undisturbed? Are not those "who constitute the State," and who add to her prosperity and her glory, preserved from the pestilence that "walketh at noonday" and ministers with such frightful assiduity to the King of Terrors? And, in the name,

then, of every principle of religion and humanity, let me ask if the compensation be not adequate and the reward sufficient for any sacrifice of pecuniary interests that quarantine restrictions may demand? Yes—ten thousand times, yes, is the response of the philanthropist, whatever his locality or profession; and, thanks to the potent influence, the wise conservatism, the broad humanity of our profession, the principles upon which this great system is reared are so firmly established, that, in despite of all opposition, they still loom up amid the proudest memorials of the past, and the noblest exponents of an advancing civilization.

It is useless for me to proclaim the untold blessings which have accrued to the human family from the discovery of the immortal Jenner, for the simple but eloquent fact that thousands are saved annually from a most loathsome disease, is sufficient attestation of the truth of this assertion.

It has not only been demonstrated that vaccination is a better protection against variola than an attack of that disease itself, in the proportion of 7 to 1, but that it has reduced the number of deaths by small-pox 80 per cent. Statistics might be indefinitely multiplied in this connexion, and sufficient testimony adduced to satisfy even the most sceptical, of the countless blessings which this inestimable boon has conferred upon the human family, but the fact is so universally acknowledged that the slightest incredulity in this regard would be esteemed a veritable madness, and it is idle to pursue the subject farther. The name of Jenner will go down to the remotest posterity, not festooned with the gory garlands of the battle-field,—not surrounded by the gorgeous paraphernalia of the kingly prerogative,—not emblazoned with the splendid trophies which attest the triumphs of the statesman,—not recorded upon the heroic page, nor embalmed in immortal verse,—but surrounded by that divine incense with which men delight to honor those who have bound up the broken heart,—who have calmed the agonized frame,—who have stayed the stalking pestilence,—who have deprived disease of its terrors, and who have robbed the grave of its ghastly victory. The pen of history may record brave deeds upon the battle-field,—the

muse of poetry may lend her sweetest numbers to enshrine the memories of those who have courted danger at the cannon's mouth, and met death in the fearful breach. The stately pillar and majestic arch may commemorate the triumphs of the conqueror; and young ambition's pulses may wildly leap as the story is recounted which tells of the hero's laurels and the martyr's crown;—but "Peace hath her victories, not less renowned than those of War," and to him whose labor and glory it has been to defy the fury of the scourge, to fetter the King of Terrors, and to inaugurate an era of peace and security where consternation and dread had reigned before, to him, I say, a monument is reared whose every stone has been quarried from the love and gratitude of humanity,—whose glory shall go down to the remotest generations,—and whose pinnacle shall kiss the clouds and lose itself amid the stars of Heaven.

It thus becomes apparent that, so far as the prevention of disease is concerned, Medicine has advanced—has proved a success—has accomplished its high and holy mission.

(2.) Disease is more successfully treated now than formerly. If "combatting disease" be the very end and consummation of all medication, then it must follow, *a priori*, that, with a more exact knowledge of the nature and habits of disease, with a more efficient and extended therapeutical armory, and with a greater experience in the use of the weapons of attack, the success of physicians must have proportionately increased. And when it is remembered that since the days of Hippocrates, in all ages and in every locality, wherever disease has claimed a victim, and suffering humanity demanded professional assistance, in the mansions of the rich, in the habitations of the poor, with the proud and humble, among all classes and conditions of the people throughout the civilized globe, there have been found enthusiastic and intelligent students of nature to observe, record and compare the presenting phenomena, that to the Therapeutical Armory Avenbrugger has added the art of *Percussion*; Laennec that of *Auscultation*; Ehrenberg, that of *Micography*; and Prout, Jones, Bird and Thudicum, that of *Chemical Analysis*; whilst *Pathological Anatomy* has been elevated to the dignity of a

distinct science, and the *Materia Medica* has been amplified by the addition of such Pharmaceutical improvements, Chemical discoveries, and Botanical contributions as have developed a nearer, a brighter, and a more honorable era in its existence, and that in every city of the civilized globe, multitudes of temples, unsurpassed in beauty and magnificence, have been erected, and dedicated to the study of medicine, whose courts are continually thronged with ardent votaries, and whose glowing altars drink the rich libations of the noblest hearts and the proudest intellects,—I say when all these things are remembered, the superior skill of modern Physicians,—the practical triumphs of that art which has been thus developed and improved—the removal of those causes which increase human mortality—and the gradual restriction of disease within the contracted limits of its appropriate sphere, becomes a logical necessity, as well as a positive reality.

But, if actual proof of the advance of medicine in this direction be desired, we have but to mention a few of the multitudinous facts presented in the last report of the Registrar General of England, premising that whatever is true of England in this regard, is equally so of other countries where medical science has been cultivated. By comparing the years 1679 and 1859, it appears that, for every 100,000 persons, the deaths by

Small Pox at one period was 357 and 42 at the other.							
By Fever	"	"	"	749	"	59	"
By Childbirth	"	"	"	86	"	17	"
By Dysentery	"	"	"	753	"	8	"
By Cholera	"	"	"	130	"	7	"
Scurvy and Purpura	"	"	"	142	"	2	"
Syphilis	"	"	"	21	"	12	"
Dropsy	"	"	"	298	"	26	"
Consumption	"	"	"	1079	"	611	"
Diseases of digestion	"	"	"	146	"	95	"
Children by convulsions and teething	"	"	"	1175	"	136	"

It is thus made evident that there has been a radical improvement in the treatment of every class of maladies; and hence, if the practical success of a given system be any proof of its efficiency or test of its truth, medicine can establish its claims to the confidence of mankind by an

appeal to that record which she has traced for herself, not only in golden letters upon the historic page, but upon millions of grateful hearts, and in characters as undying as the immortal spirit which gives them being.

(3.) It could likewise be shown that the average duration of human life has increased, and is greatest in those localities where medicine has been most successfully cultivated:—thus, in England, the average duration is 42 years; in France, 40; in Germany, 37; in Holland, 38; and in Naples, 36; an increase since the seventeenth century of about six years for each country.

M. Flourens declares that “the duration of *life* is in proportion to the duration of *growth*, the duration of growth to that of gestation, and the duration of gestation to the height of the animal.” He further asserts that the duration of growth is limited by the union of the bones with their epiphysis, and that, in all animals which he has subjected to his observations, the duration of life is five times that of their growth. This union takes place in man at 20 years, and hence the normal duration of life must be 100 years. Nature, then, demands that the mean duration of human life shall be extended up to this point; medicine responds to this demand, and, gradually but surely, extends it; and upon the blessed harmony which is thus established,—upon this link, forged by the hand of divinity itself,—upon the glorious fellowship developed between the science of Physic and the wondrous plan of creation, we rear the whole superstructure of our faith,—planting our time-honored flag upon its summit, laughing scepticism to scorn, and, cheered by the blessings and prayers of thousands, shout our songs of defiance to the four winds of Heaven.

From these, many other considerations might be adduced in this connexion, it becomes evident that the *subjective theory* upon which medicine is founded, has been tested by *objective facts*, and found correct; that the *experimentum crucis* of actual experiment has been fairly and successfully applied to that process of ratiocination upon which the system is founded, and that a practical and triumphant demonstration has been given of the correctness of those principles upon which the grand superstructure of medicine

has been reared ; and hence, in accordance with the strictest rules of logical deduction, and in obedience to every obligation of fair dealing, both friend and foe must admit that our proposition is proven, and that medicine is justly entitled to the rank, the dignity, and the homage of real science.

Beware then, Gentlemen, of falling into the popular but fatal error, of supposing that the principles of medicine are uncertain, illusory and unreliable, and that the art derived from them has no substantial basis in the immutable and harmonious laws of nature. But, on the other hand, remember that before Plato taught or Bacon made his great discovery, the Father and Founder of medicine—the wonderful oracle of Cos—cultivated this particular department of learning upon the strictest principles of inductive philosophy ; that Galen was the most profound thinker of his times ; that Boerhaave, Haller, Helmont, and Stahl were the master minds of their respective epochs, that Bichat, by his wonderful powers of analogy, his keen penetration into the mysteries of nature, and the splendor of his genius, effected a revolution in the science of medicine as wonderful as that accomplished by the principia of Newton in the physical world ; that Louis has established rules for exactness in medical investigation, which constitute one of the most complete systems of logical enquiry known to the world ; and that the ranks of the profession contain at this moment, men, who, for the extent and variety of their attainments, their enthusiasm and confidence in the “healing art,” the strength, the depth, and the vigor of their intellects, and their devotion to the honor, the interests, and the true glory of their noble calling, are unequalled by the members of any other profession upon the earth. If you will but bear these things in mind, Gentlemen, our beloved profession will immediately assume its proper position among men. If our Graduates are but governed by the principles which these reflections inspire, the world will delight to encourage them and to honor their vocation. If the standard of appreciation and effort be thus elevated, the Physician will at once see the field of his usefulness enlarged, the dignity of his calling vindicated, the malice of his enemies disarmed, and his

highest and noblest destiny fulfilled. False systems will wither and die before the glory of the true; prejudice will give place to confidence and respect; all doubts respecting the efficacy and the value of medicine will fade as the "leaves of the forest;" deeds of martyrdom will distinguish the profession everywhere; and a newer, nobler, and more glorious era will dawn upon the Medical Profession—an era of extended knowledge, of augmented power, and of increased success, to all who have identified themselves with this most honorable pursuit. The Practitioner of medicine will then stand forth in his true character, not surrounded by the gloomy mists of superstition—not covered with the tinsel vestments of empiricism—not the embodiment of selfishness, or the creature of avarice—not a degraded slave in the treadmill of *routine*, or a servile truckler to mere authority, but the expounder of a system of philosophy which courts examination and challenges criticism, the disciple of a real and most noble science, the representative and the exemplar of a broad and Christian philanthropy, and the champion of an art whose success is dependent upon the largest liberty of thought, the utmost freedom of opinion, and the most rigid application of the principles unfolded by the laws of nature.

Yes, Gentlemen, this is essentially an age of advancement; progress is the watchword of modern civilization; the whole world is in motion; and the disciples of every science are shouting "Eureka." Quiescence has thus become synonymous with stagnation,—immobility is a practical retrogression, whilst contentment with the past, or satisfaction with the present, implies degeneracy and entails disgrace. The members of the Medical Profession have caught the inspiration of the age, and the historian will record no prouder triumphs of genius, and no more splendid victories in the cause of humanity, than those which have been won by the physicians of the nineteenth century. Their honors have not been gained upon the tented field, or in the halls of listening senates, but by the midnight lamp, in the solitary cabinet, and at the bed-side of disease. Their services to the race have not been honored with ovations, or rewarded with stately monuments; but the tears, the prayers, and the admiration of earth's afflicted children,

have been their recompense. Their fame does not depend upon the evanescent applause of the fickle multitude, but the glory of their deeds has gone forth to the remotest quarters of the globe,—it is written in letters of gold upon the clouds of Heaven, and traced in characters of adamant, upon the holiest page in the history of the race. When the story of Aboukir Bay and Trafalgar shall be forgotten,—when Waterloo and Magenta shall live only in tradition,—when the proudest laurels have withered, and the bloodiest sword has grown rusty, and the heroes of the most glorious and gory fields have sunk into oblivion, the electric chain which binds the human heart to those who have served humanity, will remain as bright, as beautiful, and as permanent as when first forged by the hands of the Almighty Architect Himself; the sacrifices, the martyrdom, and the victories of our noble profession will be cherished with delight through all coming time; whilst the achievements of medicine, as proclaimed in the employment of the microscope, in the discovery of anæsthetics, in the unlocking of the mysteries of physiology by the key of vivisection, in the perfection of the art of physical exploration, in the wonderful contributions which have been made to the departments of animal, vegetable and mineral chemistry, and in all the varied measures, principles and appliances with which modern science combats disease, mitigates suffering, and prolongs the duration of human life,—these, I say, will be regarded as the great criterion by which to determine the character of the age, and remembered with increasing gratitude and admiration whilst humanity has a friend and science a temple upon the earth.

Let it be your first care to profit by this noble example. Let it be your delight to remember the virtues, to appreciate the struggles, and to rejoice in the triumphs of the heroes and martyrs who have adorned the annals of medicine. Let it be your highest glory to unite with the good and true men of every land in the holy work of advancing the cause of humanity, of elevating professional character, and of vindicating the honor of that vocation to whose sacred service you have this day consecrated your lives.

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